

290578US0XPCT.ST25.txt  
SEQUENCE LISTING

<110> Ishida, Nobuhiro  
Tokuhiko, Kenro  
Nagamori, Eiji  
Takahashi, Haruo  
Saito, Satoshi  
Ohni Shi, Tohru

<120> Promoter in the presence of organic acid and utilization thereof

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<141> 2006-05-08

<150> PCT/JP04/16799  
<151> 2004-11-05

<150> JP 2003-379076  
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<170> PatentIn version 3.3

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## 290578US0XPCT.ST25.txt

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&lt;213&gt; Bovine Lactate Dehydrogenase

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&lt;221&gt; CDS

&lt;222&gt; (1)..(999)

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His Val Pro Gln Asn Lys Ile Thr Ile Val Gly Val Gly Ala Val Gly	
20 25 30	
atg gcc tgt gcc atc agt atc tta atg aag gac ttg gca gat gaa gtt	144
Met Ala Cys Ala Ile Ser Ile Leu Met Lys Asp Leu Ala Asp Glu Val	
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Lys Asp Tyr Asn Val Thr Ala Asn Ser Arg Leu Val Ile Ile Thr Ala	
85 90 95	
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Gly Ala Arg Gln Gln Glu Gly Glu Ser Arg Leu Asn Leu Val Gln Arg	
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130 135 140	
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Ala Leu Val Asp Val Met Glu Asp Lys Leu Lys Gly Glu Met Met Asp 50 55 60
Leu Gln His Gly Ser Leu Phe Leu Arg Thr Pro Lys Ile Val Ser Gly 65 70 75 80
Lys Asp Tyr Asn Val Thr Ala Asn Ser Arg Leu Val Ile Ile Thr Ala 85 90 95
Gly Ala Arg Gln Gln Glu Gly Glu Ser Arg Leu Asn Leu Val Gln Arg Page 6

100

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130 135 140

Tyr Val Ala Trp Lys Ile Ser Gly Phe Pro Lys Asn Arg Val Ile Gly  
145 150 155 160

Ser Gly Cys Asn Leu Asp Ser Ala Arg Phe Arg Tyr Leu Met Gly Glu  
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Arg Leu Gly Val His Pro Leu Ser Cys His Gly Trp Ile Leu Gly Glu  
180 185 190

His Gly Asp Ser Ser Val Pro Val Trp Ser Gly Val Asn Val Ala Gly  
195 200 205

Val Ser Leu Lys Asn Leu His Pro Glu Leu Gly Thr Asp Ala Asp Lys  
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Glu Gln Trp Lys Ala Val His Lys Gln Val Val Asp Ser Ala Tyr Glu  
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Val Ile Lys Leu Lys Gly Tyr Thr Ser Trp Ala Ile Gly Leu Ser Val  
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Ala Asp Leu Ala Glu Ser Ile Met Lys Asn Leu Arg Arg Val His Pro  
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Ile Ser Thr Met Ile Lys Gly Leu Tyr Gly Ile Lys Glu Asp Val Phe  
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                   Met Ala Thr Leu Lys Asp Gln Leu Ile Gln Asn Leu Leu  
                   1                  5                  10

aaa gaa gaa cat gtt cca caa aat aaa att act att gtt ggt gtt ggt 99  
 Lys Glu Glu His Val Pro Gln Asn Lys Ile Thr Ile Val Gly Val Gly

## 290578US0XPCT.ST25.txt

15	20	25	
gct gtt ggt atg gct tgt gct att tct att ttg atg aaa gat ttg gct Ala Val Gly Met Ala Cys Ala Ile Ser Ile Leu Met Lys Asp Leu Ala 30 35 40 45			147
gat gaa gtt gct ttg gtt gat gtt atg gaa gat aaa ttg aaa ggt gaa Asp Glu Val Ala Leu Val Asp Val Met Glu Asp Lys Leu Lys Gly Glu 50 55 60			195
atg atg gat ttg caa cat ggt tct ttg ttt ttg aga act cca aaa att Met Met Asp Leu Gln His Gly Ser Leu Phe Leu Arg Thr Pro Lys Ile 65 70 75			243
gtt tct ggt aaa gat tat aat gtt act gct aat tct aga ttg gtt att Val Ser Gly Lys Asp Tyr Asn Val Thr Ala Asn Ser Arg Leu Val Ile 80 85 90			291
att act gct ggt gct aga caa caa gaa ggt gaa tct aga ttg aat ttg Ile Thr Ala Gly Ala Arg Gln Gln Glu Gly Glu Ser Arg Leu Asn Leu 95 100 105			339
gtt caa aga aat gtt aat att ttt aaa ttt att att cca aat att gtt Val Gln Arg Asn Val Asn Ile Phe Lys Phe Ile Ile Pro Asn Ile Val 110 115 120 125			387
aaa tat tct cca aat tgt aaa ttg ttg gtt gtt tct aat cca gtt gat Lys Tyr Ser Pro Asn Cys Lys Leu Leu Val Val Ser Asn Pro Val Asp 130 135 140			435
att ttg act tat gtt gct tgg aaa att tct ggt ttt cca aaa aat aga Ile Leu Thr Tyr Val Ala Trp Lys Ile Ser Gly Phe Pro Lys Asn Arg 145 150 155			483
gtt att ggt tct ggt tgt aat ttg gat tct gct aga ttt aga tat ttg Val Ile Gly Ser Gly Cys Asn Leu Asp Ser Ala Arg Phe Arg Tyr Leu 160 165 170			531
atg ggt gaa aga ttg ggt gtt cat cca ttg tct tgt cat ggt tgg att Met Gly Glu Arg Leu Gly Val His Pro Leu Ser Cys His Gly Trp Ile 175 180 185			579
ttg ggt gaa cat ggt gat tct tct gtt cca gtt tgg tct ggt gtt aat Leu Gly Glu His Gly Asp Ser Ser Val Pro Val Trp Ser Gly Val Asn 190 195 200 205			627
gtt gct ggt gtt tct ttg aaa aat ttg cat cca gaa ttg ggt act gat Val Ala Gly Val Ser Leu Lys Asn Leu His Pro Glu Leu Gly Thr Asp 210 215 220			675
gct gat aaa gaa caa tgg aaa gct gtt cat aaa caa gtt gtt gat tct Ala Asp Lys Glu Gln Trp Lys Ala Val His Lys Gln Val Val Asp Ser 225 230 235			723
gct tat gaa gtt att aaa ttg aaa ggt tat act tct tgg gct att ggt Ala Tyr Glu Val Ile Lys Leu Lys Gly Tyr Thr Ser Trp Ala Ile Gly 240 245 250			771
ttg tct gtt gct gat ttg gct gaa tct att atg aaa aat ttg aga aga Leu Ser Val Ala Asp Leu Ala Glu Ser Ile Met Lys Asn Leu Arg Arg 255 260 265			819
gtt cat cca att tct act atg att aaa ggt ttg tat ggt att aaa gaa			867

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Val His Pro Ile Ser Thr Met Ile Lys Gly Leu Tyr Gly Ile Lys Glu  
 270 275 280 285  
 gat gtt ttt ttg tct gtt cca tgt att ttg ggt caa aat ggt att tct 915  
 Asp Val Phe Leu Ser Val Pro Cys Ile Leu Gly Gln Asn Gly Ile Ser  
 290 295 300  
 gat gtt gtt aaa gtt act ttg act cat gaa gaa gaa gct tgt ttg aaa 963  
 Asp Val Val Lys Val Thr Leu Thr His Glu Glu Glu Ala Cys Leu Lys  
 305 310 315  
 aaa tct gct gat act ttg tgg ggt att caa aaa gaa ttg caa ttt taa 1011  
 Lys Ser Ala Asp Thr Leu Trp Gly Ile Gln Lys Glu Leu Gln Phe  
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His Val Pro Gln Asn Lys Ile Thr Ile Val Gly Val Gly Ala Val Gly  
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Met Ala Cys Ala Ile Ser Ile Leu Met Lys Asp Leu Ala Asp Glu Val  
35 40 45

Ala Leu Val Asp Val Met Glu Asp Lys Leu Lys Gly Glu Met Met Asp  
50 55 60

Leu Gln His Gly Ser Leu Phe Leu Arg Thr Pro Lys Ile Val Ser Gly  
65 70 75 80

Lys Asp Tyr Asn Val Thr Ala Asn Ser Arg Leu Val Ile Ile Thr Ala  
85 90 95

Gly Ala Arg Gln Gln Glu Gly Glu Ser Arg Leu Asn Leu Val Gln Arg  
100 105 110

Asn Val Asn Ile Phe Lys Phe Ile Ile Pro Asn Ile Val Lys Tyr Ser  
115 120 125

Pro Asn Cys Lys Leu Leu Val Val Ser Asn Pro Val Asp Ile Leu Thr  
130 135 140



290578US0XPCT.ST25.txt

Tyr Val Ala Trp Lys Ile Ser Gly Phe Pro Lys Asn Arg Val Ile Gly  
 145 150 155 160

Ser Gly Cys Asn Leu Asp Ser Ala Arg Phe Arg Tyr Leu Met Gly Glu  
 165 170 175

Arg Leu Gly Val His Pro Leu Ser Cys His Gly Trp Ile Leu Gly Glu  
 180 185 190

His Gly Asp Ser Ser Val Pro Val Trp Ser Gly Val Asn Val Ala Gly  
 195 200 205

Val Ser Leu Lys Asn Leu His Pro Glu Leu Gly Thr Asp Ala Asp Lys  
 210 215 220

Glu Gln Trp Lys Ala Val His Lys Gln Val Val Asp Ser Ala Tyr Glu  
 225 230 235 240

Val Ile Lys Leu Lys Gly Tyr Thr Ser Trp Ala Ile Gly Leu Ser Val  
 245 250 255

Ala Asp Leu Ala Glu Ser Ile Met Lys Asn Leu Arg Arg Val His Pro  
 260 265 270

Ile Ser Thr Met Ile Lys Gly Leu Tyr Gly Ile Lys Glu Asp Val Phe  
 275 280 285

Leu Ser Val Pro Cys Ile Leu Gly Gln Asn Gly Ile Ser Asp Val Val  
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Lys Val Thr Leu Thr His Glu Glu Glu Ala Cys Leu Lys Lys Ser Ala  
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